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CITIZENS ENGAGEMENT IN E-PARTICIPATION ON E-GOVERNEMNT WEBSITES THROUGH SWAT MODEL: A CASE OF SAUDI ARABIA

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Abstract

E-government aims to deliver extensive and timely public services to citizens through the use of information and communication technologies in government such as e-participation. In particular, despite the growing importance of e-government in Saudi Arabia, no attention has been given to investigate the factors that may influence the adoption of e-participation. This study examines the factors influencing citizens' intention to engage in e-participation on Saudi e-government websites. The study used responses obtained from Saudi citizens. The data of the survey were analysed using Partial Least Square (PLS) approach. The results indicated that the key factors SWAT (Subjective norm, Website design, Attitude, Trust) has a significant impact on citizens' intention to engage in e-participation.

Keywords: E-government, E-participation, Saudi Arabia.

1 INTRODUCTION

Advancements in web technology have brought significant transformations the way governments deliver their services to citizens. For-example, the engagement of citizens in e-government websites through e-participation services (Hung et al. 2006). However, despite the significant investments made in e-participation services by many countries including Saudi Arabia, there is a low level of citizen engagement in e-participation (Economic 2014). More specifically, unlike traditional ways of interacting with the government, e-participation is unique because of the Internet channel. Risks of privacy and misuse of personal information exist when interacting via the Internet. Citizens will definitely engage in e-participation if they trust in their governments to offer interactive e-participation. In addition, the adoption rate of e-government services in the developing countries is low. There is a need to address the lack of effective utilization of e-government services by citizens in developing countries (Alshawi and Alalwany 2009) such as Saudi Arabia. Therefore, there is a need for a significant research attention to identify the factors that influence on citizens' intention to engage in e-participation. According to the Ali et al. (2015), "E-Participation is the use of technology to enhance participation between different stakeholders and governments". E-Participation enhances the communication between the government and citizens, and enables them to involve in policy-making process.

Saudi culture is conservative, its traditions and culture value affect every aspect of life (Al-Shehry et al. 2006). The Saudi government understands these issues and has consequentially introduced e-government services to their citizens in the hopes of maximizing its advantages. E-participation acceptance is therefore critical because it would encourage meaningful change in Saudi culture. Research has shown that individual attitude (Pons 2004), trust (Alsaghier et al. 2010; Bélanger and Carter 2008), subjective norms (Hung et al. 2006) and web design (Segovia et al. 2009) are core factors in determining individual intentions regarding the usage of information technology, such as e-participation in e-government website. However, these factors are mainly discussed based on Western culture but there is a lack of research within the Saudi Arabia context. The Saudi second e-Government plan (2012 – 2016) (E-Government Program 2012) showed that delivery of e-government services also depends upon e-participation "It provides for using IT & communication tools to support citizen participation in government processes including administration, service delivery and decision making". However, lack of citizen communication and conflicting decisions with government is a significant challenge, because it can impact on delivering citizen centric e-government services. For that reasons, ineffectiveness in delivering citizen centric services might cause citizens unsatisfied with e-government services and therefore will less likely to use them.

Therefore, the aim of this study is to investigate the key SWAT factors (Subjective norm, Website design, Attitude, Trust) towards citizens' intention to engage in e-participation in Saudi e-government websites. Following the aim, this research attempts to answer the following question: How do the key factors (such as Subjective norm, Website design, Attitude, Trust) affect citizens' intention to engage in e-participation on e-government websites in Saudi Arabia? This paper is organized follows: section 2 presents literature review. Section 3 provides theoretical background, proposes a research model and hypothesis development. Then the section 4 provides research methodology followed by section 5 data analysis. Finally the study concludes.

2 LITERATURE REVIEW

Based on reviewing the literature, this paper identified four main factors that have an effect on citizens' intention to engage in e-participation in e-government websites. These factors are subjective norms, website design, attitude and trust.

2.1 Subjective Norm

Subjective norm indicates person social influence from others (e.g. family, friends and colleagues) opinions to perform behavioural or not (Ajzen 1991). In this study it refers to citizen's social influence to adopt e-participation. A number of theoretical models such as the planned behaviour (TPB) have hypothesized subjective norm to have a significant direct impact on behavioural intention (Ajzen 1991). In particular, empirical evidence of the relationship between subjective norm and citizens' intention to use e-government services are found in many studies (AlAwadhi and Morris 2009; Hung et al. 2006). An individual behaviour in collectivism culture such as Saudi Arabia is affected by social norms received from people who are considered important to them.

2.2 Website Design

E-government website is the main way of electronic interaction between citizens and governments. Wang et al. (2005) highlighted that website designing is one of the main challenges in producing e-government services. A well designed website helps users find relevant information effectively, thus developing the perception as user friendly (Lin 2008). No previous studies have examined the influence of website design on users' intention to use the website in the context of e-participation, although researchers have studied web design in the context of e-government services (Segovia et al. 2009). The findings suggest that a well-designed e-government website can enhance citizen's intention to use e-participation services. According to Alomari et al. (2012, e-government website design has the potential to determine the citizen's intention to engage in e-participation initiatives. Ali et al. (2015) proposed model based on Technology readiness index (TRI) and Technology Acceptance model (TAM), showed that the perceived usefulness and perceived ease of use had positive influences on citizens' readiness to use E-participation tools in Bahrain. In this research, web design considers the ease of use aspects together with various web design features such as navigational design and information content that contribute to the overall e-government website quality.

2.3 Attitude

Attitude refers to a person's evaluation of a specified behaviour (Suki and Ramayah 2010). The effect of citizens' attitudes over e-government acceptance has also come to the consideration of researchers. For-example, the significant effect of citizen attitude towards e-government services in the Arab countries (Charbaji and Mikdashi 2003; Pons 2004; Alharbi et al. 2015). Pons (Pons 2004) highlighted that throughout the Arab world initiating an e-government system requires a positive social attitudes like a traditional way of conducting business. In addition, Persaud and Sehgal (2005) showed that attitude is an important predictor of citizens' intention to use e-services.

2.4 Trust

Trust refers to the extent to which an individual believes that another individual or group will act in a favourable manner (Sohaib and Kang 2015). In the context of e-participation, the concept of trust is considered as the citizen expectation that e-participation activities will act responsibly and reliably. Previous empirical studies have explored the role of trust towards citizens' intention to engage in e-participation. Such as Lee and Kim (2014) noted that trust in government enables citizens to actively engage in e-participation because trust in government encourages citizens to have a sense of cooperation with government. Scherer and Wimmer (2014) showed that trust in e-participation tools positively affects the intended usage. The relationship between trust and citizens' intention to engage in e-participation has been considered as the potential risks and uncertainties associated with using e-participation (Bélanger and Carter 2008; Alharbi et al. 2015). As the e-participation service refers to two-way communication between citizens and government, therefore trust occupies a central role to create effective e-participation between citizens and government. The study conducted by (Reddick 2011) found that US citizens are less confident to become a part of consultative and participatory activities due to having less trust for government.

3 THEORETICAL BACKGROUND AND RESEARCH MODEL

Several research models have been developed to provide useful insights for understanding an individual's intention to engage in e-participation. For-example, attitude and subjective norm have been identified by numerous prior researches in that play a significant role in citizens' intention to use e-services (Al-Hujran et al. 2011; Alomari et al. 2012; Hung et al. 2006; Rehman et al. 2012). Besides these two factors, the review of literature revealed two other factors such as web design and trust also have a significant impact on citizens' intention to use e-participation (Carter and Bélanger 2005; Gefen et al. 2005; Segovia et al. 2009; Welch et al. 2005). Hence, the key factors "SWAT" (Subjective norm, Website design, Attitude, Trust) are selected to explain citizens' intention to engage in e-participation. These factors have been identified as the most influencing factors on citizen's intention to use e-government services (Hung et al. 2006; Alomari et al. 2012; Rehman et al. 2012) Figure 1 shows the research model.

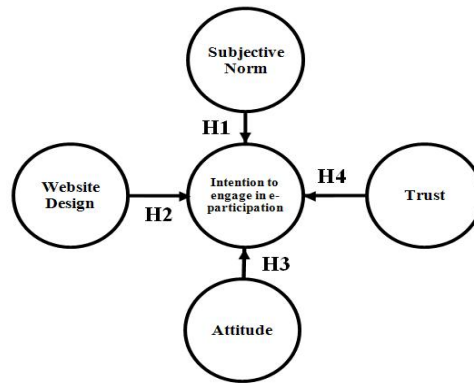


Figure 1. SWAT Model of Citizens' Intention to engage in E-Participation

3.1 Subjective Norm

Lau (2004) studied the adoption of e-government services in Hong Kong and found that opinions from family had a significant influence on individuals to use government services. Individuals within the society would influence others to use e-services to increase acceptance (Loch et al. 2003). Al-Fulih (2002) in his study showed the Saudi culture as socially active in the lives of its citizens and engenders strong relationships among family members. Therefore, the relationship between subjective norms (family, friends/colleagues and social media) influence are relevant referents of subjective norms and intention to use e-government services are high. Therefore, we hypothesize; **H1**: Subjective norm have a positive impact on citizens' intention to engage in e-participation on e-government websites.

3.2 Web Design

A well-designed e-government website delivers services that conform to citizens' expectations and foster trust which in turn enhance citizens' intention to use engage in e-participation. A well-designed e-government website positively impacts on citizens' intention to use e-participation and hence increases trust (Tan et al. 2008). According to Kumar et al. (2007), website design including ease of navigation, accessibility and personalization have a positive effect on citizens' satisfaction and e-government adoption. Well-designed e-government websites attract citizens' e-participation activities. Therefore, we hypothesize; **H2**: Web design has a positive impact on citizens' intention to engage in e-participation on e-government websites.

3.3 Attitude

Several researchers report the positive attitude in the context of citizens' use of e-government services (Wu and Chen 2005). Attitude is often predicted as the factor having the most significant impact on a

person's intention to engage in behaviour. Charbaji and Mikdashi (2003) examined that attitude is a major predictor of citizens' intention to use e-government in the Arabic countries. Hung et al. (2006) also showed that attitude is one of the significant factors that influence e-government services' acceptance in a developing country. It is anticipated that citizen who has a positive attitude toward e-participation is more likely to engage in e-participation initiatives in e-government websites. Therefore, we hypothesize; **H3**: Citizens' attitude towards e-participation has a positive impact on their intention to engage in e-participation on e-government websites.

3.4 Trust

Trust is an important factor between citizens and government in order to ensure successful acceptance of e-government services (Lee and Kim 2014; Reddick 2011; Warkentin et al. 2002). Carter and Bélanger (2005) highlighted that "citizens must have confidence in both the government and the enabling technologies". In addition, Bélanger and Carter (2008) verified that both trust in government and technology is a vital element of citizen willingness to utilize e-government services, such as e-participation. Alsaghier et al. (2010) analysed the role of trust and perceived risk regarding e-government in Saudi Arabia. The finding showed that these factors have significant positive effects on trust. Trust is also a crucial factor in using e-participation services. For-example, Scherer and Wimmer (2014) highlighted that trust in e-participation tools influence positively the intended usage. Therefore, it is anticipated that citizens with higher levels of trust in e-participation will be more likely to engage in e-participation activities. We hypothesize; **H4**: Trust has a positive impact on citizens' intention to engage in e-participation on e-government websites.

4 RESEARCH METHODOLOGY

A quantitative research method was applied in this study. In particular, the survey questionnaire was used. For the validation and testing the hypotheses, the data were collected from Saudi Arabian citizens. This study used an online survey methodology where participants were asked to fill-out a closed-ended questionnaire on 5-point Likert scale. The questionnaires were translated into local language that is Arabic language. Previously validated survey measures were used in order to ensure the items are reliable. Therefore, the Attitude scales are adopted from (Bhattacharjee 2000; Taylor and Todd 1995), Trust scales are adopted from (Alsaghier et al. 2011; Colesca 2009; Gefen 2000), web design scales are adopted from (Aladwani and Palvia 2002; Alsaghier et al. 2011; Cyr 2013; Venkatesh et al. 2003), social norm scales are adopted from (Bhattacharjee 2000; Hung et al. 2006; Taylor and Todd 1995) and intention to engage scales are adopted from (Carter and Bélanger 2005). The data was analysed by using a structural equation modelling (SEM) statistical technique, such as partial least squares (PLS) path modelling using SmartPLS version 3 (Ringle et al. 2014), to estimate the relationships between the different factors of the research model. SEM tests theoretical models using hypothesis testing to understand the simultaneous modelling of relationships among various independent and dependent variables.

5 RESULTS

5.1 Descriptive Results

A total of 489 samples were used to test the proposed model. A total of 71.7% of the respondents were male while only 28.3% of the respondents were female. This distribution of male and female is fairly representative of the population of citizens using e-government websites in Saudi. 53.2% of the respondents were aged between 25 and 29 years while 31.8% were aged between 30 and 39 years. These results show that young people are more inclined towards using e-government websites in Saudi Arabia. The majority of respondents were from the bachelor's degree level with 58.2%, followed by postgraduate degree level with 15.8%. These shows all the participants are well literate to answer the

questions. 83% of participants have more than 5 years of Internet experience, followed by 3-5 years (13.6%). This high percentage shows clearly that those respondents have the required experience to use the Internet. With respect to e-government use experience, 30% of participants have more than 1-3 years of experience, followed by 47%, which is more than 3 years. The findings show clearly that the respondents have the required e-government experience.

5.2 Reliability and Validity Assessment

The measurement model was evaluated by examining internal consistency, convergent validity and discriminant validity. Convergent and discriminant validity were evaluated by applying two criteria: (1) the square root of the average variance extracted (AVE) by a construct from its indicators was at least 0.70 and was greater than that construct's correlation with other constructs. And (2) Items loadings were at least 0.70 and are more strongly on their assigned construct rather than on the other construct. Table 1 shows the Cronbach's reliability, composite reliability and the AVE of all constructs values exceeds the recommended value of 0.70.

Factors	AVE	CR	CAIpha	ATT	TRU	SNorm	WDesign	INTE
ATT	0.81	0.934	0.893	0.90				
TRU	0.79	0.896	0.833	0.161	0.88			
SNorm	0.77	0.896	0.838	0.184	-0.076	0.86		
WDesign	0.81	0.830	0.725	-0.100	-0.105	0.105	0.84	
INTE	0.78	0.862	0.769	0.176	-0.064	-0.104	0.023	0.88

Notes: **AVE**: Average Variance Extracted, **CR**: Composite Reliability, **CAIpha**: Cronbach Alpha ; **ATT**: Attitude, **TRU**: Trust, **SNorm**: Subjective Norm, **WDesgin**: Web Design, **INTE**: Intention to engage in e-participation ; Diagonal elements are the square root of AVE.

Table 1. Reliability, Correlation, and Discriminant Validity of Constructs

5.3 Structural Model Testing

The structural model and hypotheses were tested, by investigating the significance of the path coefficients and the (R^2) variance of the dependent variable. The significance of the paths was determined by t-statistical test calculated with the bootstrapping technique at a 5 percent significance level. The coefficients of the causal relationships between variable in the research model used to approve or disprove the hypotheses. The coefficients and their t-value on the structural model, and the coefficients of determination (R^2) for dependent construct are shown in Table 2 and Figure 2.

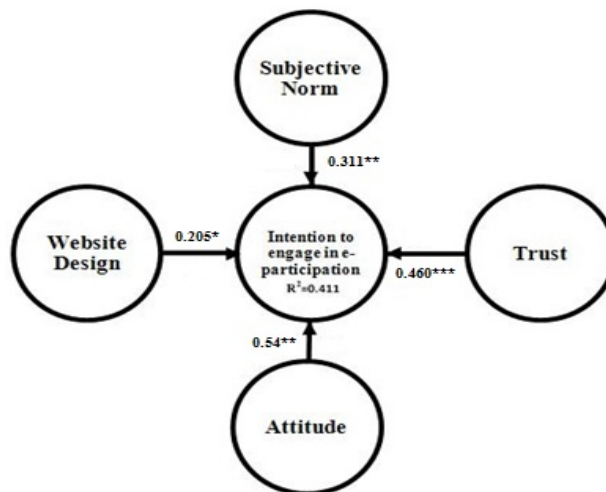


Figure 2. Structural Model (Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$)

As shown in the Table 2, the results of this study confirm H1 to H4 hypotheses and are accepted. $R^2=0.411$ indicates 41 percent variance in citizen intention to engage in e-participation through e-government website in Saudi. This means that the factors in SWAT model (Subjective norm, Website design, Attitude, Trust) have significant effects on intention to engage in e-participation in Saudi context.

Hypothesis	Path	Mean	SD	t-statistics	p-value	Supported?
H1	SNorm -> INTE	0.312	0.114	3.123	0.002**	Yes
H2	WDesign -> INTE	0.132	0.080	1.977	0.049*	Yes
H3	ATT -> INTE	0.398	0.117	2.855	0.003**	Yes
H4	TRU -> INTE	0.299	0.131	3.186	0.000***	Yes

ATT: Attitude, TRU: Trust, SNorm: Subjective Norm, WDesign: Web Design, INTE: Intention to engage in e-participation ; *significant at the 0.05 level **significant at the 0.01 level ***significant at the 0.001 level

Table 2. Hypothesis testing results

6 DISCUSSION AND CONCLUSION

The purpose of this research was to investigate how SWAT factors (Subjective norm, Website design, Attitude, Trust) influence citizens' intention to engage in e-participation in Saudi e-government websites. SWAT enhances government-citizen interaction to facilitate citizens' participation. Based on literature a SWAT model was proposed, the data were collected from Saudi citizens to find out their intention to engage in e-participation. The findings of this study are as follows. First, we have learnt that the SWAT factors (Subjective norm, Website design, Attitude, Trust) have strong effects towards intention to engage in e-participation in Saudi Arabia. Studies have shown that individual attitudes and behaviours are formed because of the cultural values shared by a group of people (Leidner and Kayworth 2006). The results show that citizen who has a positive attitude is more likely to engage in e-participation initiatives in e-government websites in Saudi context. This is consistent with (Al-Hujran et al. 2014; Nam 2012; Wu and Chen 2005).

Second, we found that the trust occupies a central role to create effective conversation between citizens and government for e-participation. Saudi Arabia is considered high uncertainty avoidance culture (Hofstede et al. 2010) and thus citizen are prone to avoid tasks that involve a high degree of uncertainty unless strong guarantees and security measures for fulfilment are provided. As a result, Arabic citizens prefer to communicate and establish trust with known entities. Citizen trust in e-participation once transmitted to e-government, and then it becomes a central issue of importance in adopting the services. Trust influence is particularly relevant to the Saudi culture, which is characterized by lack of trust and high power distance (Hofstede et al. 2010). However, our results show Saudi citizens' trust has significant influence on the intention to engage in e-participation. The results are consistent with Reddick (2011) highlighted that that citizens will be more confident to become a part of consultative and participatory activities due to trust for government (Soliman et al. 2006; Welch et al. 2005).

Third, the use of e-participation as a medium of communication between citizens and the Saudi government is a main purpose of this study, and the influence of the opinions of others (subjective norms) is considered important in this context. Saudi Arabia is considered a high collectivistic culture (Hofstede et al. 2010) and therefore citizen behaviour in collectivistic country is affected by social norms received from people who are considered important to them. Our results show that citizens willing to use e-participation if their social norms are high towards e-participation because e-government websites use a range of the tools for e-participation, such as using social networking websites or opinion from friends and family. This is consistent with (Al-Hujran et al. 2014; AlAwadhi and Morris 2009; Gefen et al. 2005; Hung et al. 2006).

Finally, e-government website design has the potential to determine the citizen's intention to engage in e-participation initiatives. Well-designed e-government websites attract citizens' intention for e-participation activities. For-example, E-Government Satisfaction Index (Freed and Berg 2012) recommends seven features to attract more citizens to the active use of e-government website, such as (1) functionality and usefulness of the online features, (2) Content: accuracy and quality of information, (3) Search: quality of search results available, (4) Navigation: organization of the site and options for navigation, (5) Look and feel: visual appeal of the website, (6) Transparency of the information about what the government is doing (7) website performance: speed, consistency, and error-free loading of web pages. Our results show that the design of e-government website has positive impact on citizens' intention to engage in e-participation. Our results are consistent with (Alomari et al. 2012; Tan et al. 2008). The findings of this study provide guidelines for policy makers in Saudi Government on citizens' determinants for adopting e-participation services. The proposed model in this study, based on the review of the existing theories and models aims to provide a better understanding of the relevant issues of citizen engagement in e-participation. Saudi Government can use the insights of this study to make citizens familiar with their online presence on e-government websites. For-example, to develop effective e-participation, Saudi government should implement the four key factors of SWAT (Subjective norm, Website design, Attitude, Trust) to enhance citizen engagement in e-participation. Furthermore, taking into account the interdisciplinary nature of e-participation, the SWAT model proposed in this research is also useful for overcoming the challenges related to the various aspects effecting e-participation that emerge in distinct research disciplines.

7 LIMITATION AND FUTURE WORK

There are still some limitations in this study. For-example, data collection was conducted in a single country (Saudi Arabia) setting with its unique social, economic, and political characteristics. This could impact the generalization of the study. Future studies need to extend the sample size and collect data from other counties to further validate the research model. In addition, one limitation that should be recognised is the imbalance in the gender. Further, this research didn't provide a comprehensive view of all factors influencing the engage in e-participation. Future studies can use the other factors that are more likely to impact on e-participation.

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